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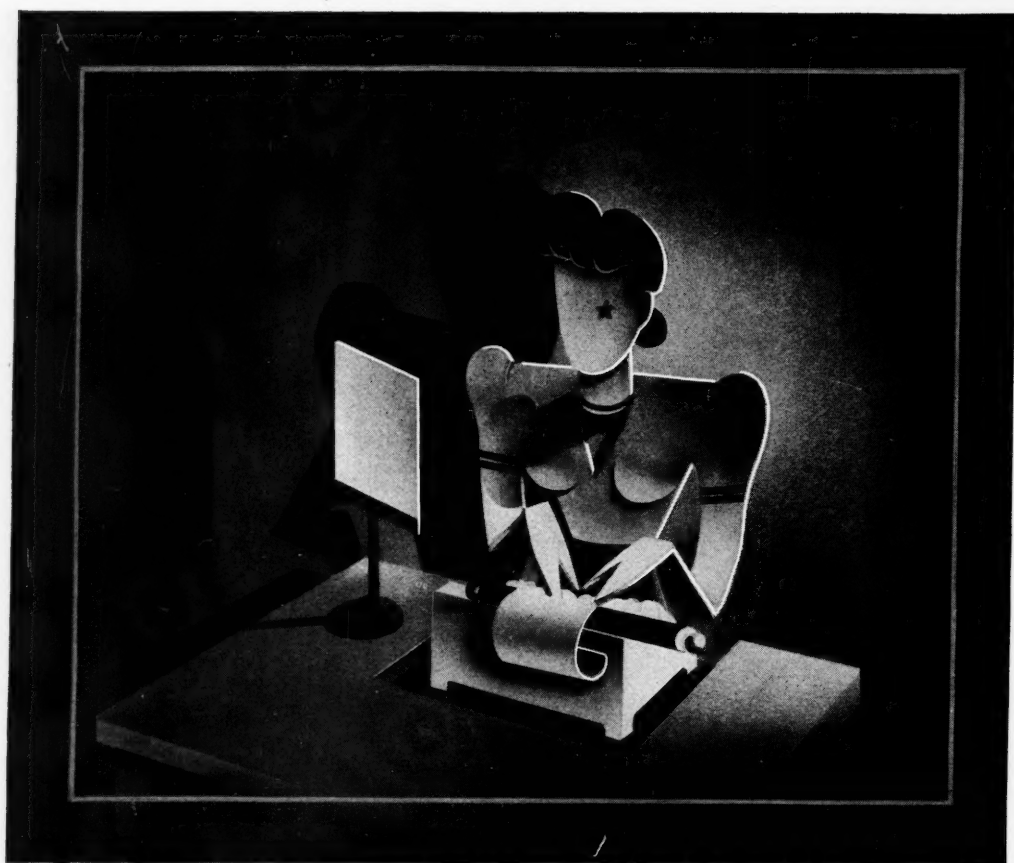
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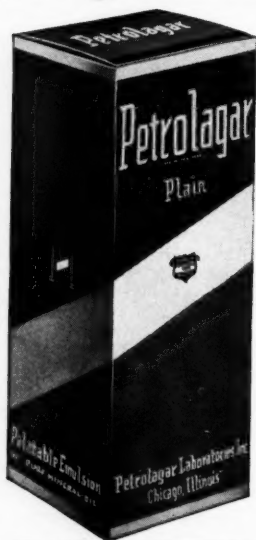
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VOLUME XXIII

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NUMBER I

ANESTHESIA FOR THE BENEFIT OF THE PATIENT A SYMPOSIUM

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PROVIDENCE, R. I.

During the eighty-seven years which have elapsed since the introduction of etherization, more than five hundred agents for producing surgical anesthesia have been recommended and tried. While most of these agents have proved so inefficient or so dangerous that they have shortly been abandoned, more than fifty agents are in use at the present time and these agents are administered by no less than twenty-five different methods; these figures not including the many combinations of agents and methods. The range is from original ether, chloroform, and nitrous oxide by inhalation, through the waning popularity of spinocain, rectal avertin and intravenous hedonal, down to the most recent introductions, inhalation trichlorethylene, intravenous pentothal and regional intracain. To further complicate the problem, while in England administration of anesthetics is a major surgical problem, in this country, any technic which is adopted by trained anesthetists will shortly be used by hospital interns and nurses. The result of this anesthetic complexity and confusion is indicated in the recent

edition of Crossen's standard work on "Operative Gynecology"—"it is evident to any experienced observer that the administration of ether, today, in general, falls far short of the skill and efficiency of former years, both in safety to the patient and in comfort to her." With a similar impression, the program committee has requested a symposium on present day anesthesia.

While it is unlikely that William Morton, in 1846, chanced upon the best anesthetic, we have so far been unsuccessful in the search for a better one "in safety to the patient and in comfort to her." Whether one of the present newer agents will prove to be the ideal one we do not know and cannot hope to decide at this meeting. A fair presentation of the problem may help to clarify the situation. With this object we present the topic "Anesthesia for the Benefit of the Patient." The subject will be discussed under three headings:—

Presented before the one hundred and twenty-eighth Annual Meeting of the Rhode Island Medical Society, Providence, June 7-8, 1939.

I. PREMEDICATION

At last evening's session, Dr. Soma Weiss, in his address on "Circulatory Collapse and Shock," placed fear as first among the predisposing causes of surgical shock.

The patient approaches a surgical operation with more or less misgiving, tinged with evident or concealed fear. This condition of apprehension can be entirely overcome by preliminary administration of one of the hypnotic drugs. Preliminary medication also insures smoother induction, reduced dosage of the anesthetic agent, and better recovery. In fact, intelligent use of preliminary hypnotics contributes both to the safety and to the comfort of anesthesia.

Hypnotics may be physiologically classified as 1, Pure Hypnotics; 2, Sedatives; 3, Narcotics. The only effect of a pure hypnotic is to produce sleep. Sedatives quiet nervous excitability and lessen reflex response to stimulation. Narcotics have so powerful an effect in relief of pain that this action overshadows their hypnotic effect. The action of these drugs is to a degree concurrent. Pure hypnotics have some sedative effect. Sedatives, by quieting nervous excitement, tend to produce sleep. But hypnotics, in the presence of severe pain, induce delirium rather than sleep, while narcotics often relieve pain but leave the patient wide awake.

Avertin combines hypnotic, sedative, and narcotic effects. It produces deep sleep, will quiet the convulsions of tetanus, and will overcome the most severe pain. Avertin must be administered by rectum, in dosage computed from the body weight, under careful control of temperature and acidity. Secretion of mucus is not stimulated; there is no increase in perspiration, in bronchial secretion or in the flow of saliva. Children are tolerant to avertin. The drug is not cumulative in effect. The blood pressure is lowered; there is some increase in blood sugar and a tendency to acidosis. Fatty degeneration of the liver and kidneys may follow. While the heart action is unaffected, the respiration is markedly depressed, the effect being irreversible by any therapeutic measure. Avertin has but a narrow margin of safety. With this narrow margin of safety, with irreversible respiratory depression, and degenerative effects on the liver and kidneys, avertin is too dangerous a drug for routine use as a preliminary hypnotic.

Paraldehyde may be administered by mouth, by rectum, or intravenously. It is commonly listed as the safest hypnotic known. The margin of safety is at least eight times the maximum therapeutic dose. Paraldehyde is excreted unchanged, largely through the lungs, but also by the skin and kidneys. Secretion of mucus is stimulated. The renal effect is a mild diuresis. There are no deleterious effects on the circulation, respiration, blood pressure, or metabolism, and no known subsidiary effects on the functions of other organs. The objection to the use of paraldehyde results from its disagreeable taste and penetrating, persistent odor. For this reason the use of paraldehyde is limited to rectal administration. Excreted almost entirely through the lungs, it is a valuable agent for use when it is important to avoid kidney strain.

The numerous salts of barbituric acid are obtained from urea by substitution of acid radicles. In the barbituric acid formula, two hydrogen atoms in the methylene group (CH_2) are very active and may be displaced by bromine, hydroxyl, nitro or other radicles or by ethyl, allyl, amyl, iso-butyl, iso-propyl, or other groups. The number of possible combinations runs into thousands. All of these drugs are powerful hypnotics, with sedative and antispasmodic effects. They have little effect upon the heart but diminish the rate and volume of respiration. The liver is not affected. The barbiturates are slowly eliminated through the kidneys.

The rate of urinary excretion is diminished. Because they are slowly eliminated, cumulative effects may result from repeated administration. Some patients are specially susceptible to these effects. While children require and tolerate increased dosage, the aged are particularly susceptible. A child ten years old requires the adult dose but a man of seventy takes half as much.

The Council on Pharmacy and Chemistry has ruled that names of barbiturates shall end in "al." The German "Evipan" is known in this country as "Evipal." Barbiturates are roughly classified according to their rapidity of action, beginning with slow acting barbital. Rapid acting barbiturates are characterized by quicker induction, a shorter effective period and more rapid recovery; they have less cumulative effect and are less likely to damage the liver and kidneys; after-effects are generally unnoticeable. Of the rapid barbiturates, ipral, dial, neonal, cyclobarbital, sodium alurate, sodium amytal, and sodium ortal are similar in action and effect. Pentobarbital, isomeric with sodium amytal, as it contains the same number of identical atoms, but arranged according to a different formula, is more efficient than sodium amytal, with doubled speed of induction and recovery. This is the present most popular drug for preliminary medication. The trade name "Nembutal" is used in preference to the chemical name "Pentobarbital" to avoid possible confusion with "Phenobarbital," a drug whose benzene ring gives it sedative rather than hypnotic power. Cyclural, trade name "Evipal," is more rapid in action and recovery than nembutal. Pentothal, or thio-nembutal, is equivalent to evipal in both of these particulars. Evipal and pentothal are recommended and used as intravenous anesthetics, a fact which endangers their reputation as to safety. Beginning with chloral, every intravenous anesthetic thus far has been short lived.

The barbiturates provide our most valuable preliminary medicaments. Their effect is very constant. That their margin of safety may be greater even than that of paraldehyde is suggested by the case recorded by Gwathmey in which recovery followed forty-three 4 grain tablets, taken with suicidal intent. We have reported recovery from fifty-six 3 grain capsules of sodium amytal. For preliminary medication, our present choice is nembutal, rapid in action and in recovery, and free from after-effects when used in therapeutic doses.

Of the opium alkaloids, morphin is the most efficient. With powerful hypnotic and sedative powers it combines a specific depression of the sense of pain. Morphin acts as a stimulant to the heart muscle. It depresses the respiratory center, producing slow and shallow respiratory movements, less responsive to an excess of carbon dioxide. Nausea and vomiting frequently result, from stimulation of the vomiting center. Secretions are checked; retention of urine frequently follows; metabolism is uniformly depressed. Despite these objections, morphin is a valuable agent for preliminary medication. It quiets reflex response and reduces the required dosage of the anesthetic. Its greatest advantage lies in its power to anticipate post-operative pain. Objections to the use of morphin are diminished by conjunction with atropin, which overcomes some of its chief drawbacks. Atropin depresses the vomiting center, depresses the vagal center, depresses the oculo-motor center, stimulates the respiration, actions opposed to the effects of morphin but not interfering with its sedative action and its specific relief of pain.

Hyoscin, identical with scopolamin, given in conjunction with morphin, accentuates the effect on

the cerebral centers and lessens reflex response to stimulation. The drug is uncertain in its effect but this objection is said to have been overcome by use of a freshly prepared product.

Preliminary medication has an undoubted influence on post-operative nausea and vomiting and retention of urine. There is little doubt that the most frequent cause of the nausea and vomiting following operation is cerebral anoxia. Next in order is the drug used as a preliminary hypnotic. Tabulation of the results in series of cases with different preliminary drugs gave paraldehyde the best showing in this respect and morphin the worst. With paraldehyde no vomiting occurred in 75% of the cases; with no preliminary, in 72%; with barbiturates, in 62%; with avertin, in 55%; and with morphin, in 43%. In avoiding retention of urine, the barbiturates showed the best record, avertin the worst. Following barbiturates, 71% of the patients voided, 70% voided following paraldehyde, 66% after no preliminary hypnotic, 50% after morphin; only 40% of the avertin patients avoided post-operative catheterization. In these two respects also the use of paraldehyde and the barbiturates for preliminary medication contribute to the comfort as well as the safety of the patient.

II. ANESTHETIC AGENTS AND THE HUMAN BODY

Of the several criteria in the choice of anesthesia the effect of the anesthetic agent upon the patient's parenchymatous structures and vital processes is extremely important. It is fundamental in anesthesia, as in other branches of medicine, that the administration of a drug that will further damage an already damaged structure or that will tend to interfere with an already poorly functioning vital process is contraindicated. It is primarily on this basis that anesthetic drugs and methods are chosen. The only time that the proper agent should not be administered is when the anesthetist is unfamiliar with the agent or the correct manner of its use. Because of this it is not amiss to review the action of anesthetic agents upon the human economy.

Metabolism

Let us first consider the effect of these drugs upon metabolism. Patients suffering with disturbed metabolism, for example individuals with diabetes or hyperthyroidism, are not infrequent subjects for surgery.

There is very little known about the effect of anesthetic agents upon oxygen consumption by bodily tissues, that is, in the production of histotoxic anoxia. Concerning the interference with oxygen supply to the patient by anesthetic agents, that is, in the production of anoxic anoxia, however, there is considerable knowledge. It is accepted that most anesthetic agents allow for more than a normal supply of oxygen to the patient, provided, of course, that there is no interference with the ingress or egress of respired atmosphere. Two agents, however, nitrous-oxide and ethylene, because of their very weak anesthetic properties, interfere markedly with oxygen supply. These agents, to be effective, expose the patient to less oxygen than is in room atmosphere and unless these agents can lean upon the crutch of either heavy premedication or basal anesthetics, oxygen want is definite. In patients in whom adequate oxygen is important, as in hyperthyroidism, this oxygen want may be disastrous.

Ether can be administered with a plentitude of oxygen. The period of induction with the weaker agents, as nitrous-oxide or ethylene, however, is apt to be a period of anoxia. Cyclopropane, because of its extreme potency, can be administered with an overabundance of oxygen.

Glycoregulatory System

The liver occupies an important role in metabolism. It has several functions; the first which we shall consider is that of glycogen storage. Disturbance in glycogen reserve in certain patients, as diabetics, may be serious. Ether empties the liver of its glycogen, as evidenced by a marked increase in the blood sugar. The gases nitrous-oxide, ethylene and cyclopropane have very little, if any, effect in this regard. The anoxia that may be associated with nitrous-oxide or ethylene anesthesia may be responsible for an increase in blood sugar. Fear and excitement may also empty the liver of its stored glycogen.

The glycogenolysis due to ether anesthesia, associated with the greater fluid loss under ether anesthesia as compared with the gases, induces a greater tendency to acidosis and would thus tend to be contraindicated in patients in whom acidosis is to be feared. This tendency to acidosis is manifested by acetoneuria and a decrease in the carbon dioxide combining power of the blood. This lowering of the alkali reserve is apt to be great with ether and is also true of chloroform anesthesia. Spinal anesthesia may, to a lesser degree, cause a lowering of the alkali reserve particularly if associated with a slowed circulation. Local anesthesia causes no diminution in the alkali reserve.

Liver

Not only may anesthesia interfere with the functions of the liver but it may cause definite damage to this structure. This damage may be easily reversible, temporary or permanent. Liver cells recuperate rapidly. But this organ may be sufficiently injured as to definitely alter the convalescence of the patient. The damage can be so acute, however, that liver insufficiency might result fatally.

Any anesthetic agent so administered as to interfere with a normal supply of oxygen to the body can by anoxemia injure this structure. The extent of damage is dependent on the degree and duration of diminished oxygen supply. Thus agents as nitrous-oxide and ethylene, though of no deleterious action themselves, through the suboxigena-

tion associated with their administration, may result in some degree of liver damage.

Liver damage may also be caused by the direct action of an anesthetic agent upon its cells. Notorious in this regard is chloroform. Ether causes a moderate degree of liver damage though not to the same extent as does chloroform. This damaging action can to a large degree be obviated by hyperoxygenation of the patient. Thus the liver damage of chloroform-oxygen may be less than ether-air anesthesia. Ether-oxygen anesthesia will cause less damage than chloroform-oxygen.

The short-acting barbiturates given as anesthetics are broken down in the liver and conceivably may further damage an already damaged organ. Anesthetic agents given intraspinally have very little or no effect on this structure. Since agents for regional anesthesia, as procaine, are broken down in the liver it must be remembered that large amounts of these agents as used in field block must be considered to add to the load of a poorly functioning liver. Cyclopropane, both because of the hyperoxygenation associated with its administration and because of its lack of toxicity on this structure, is not considered as injurious to the liver.

Avertin is broken down in the liver. It decreases liver function to a degree and is considered damaging to an already damaged organ.

Among the functions of the liver is the excretion of bile. This secretion is definitely inhibited by ether anesthesia.

Respiration

The effects of anesthesia upon respiration may be roughly divided into two, local irritant action and depression. Ether is considered a local irritant. Cyclopropane in concentrations higher than employed therapeutically is also irritating. The gases nitrous-oxide and ethylene are not.

Ether and cyclopropane in overdose kill by respiratory depression. The higher oxygen saturation associated with cyclopropane anesthesia allows for a larger margin of safety between cessation of respiration and circulatory failure. The approach to cessation of respiration due to ether is more clearly marked than with cyclopropane, however, and less likely to occur in unskilled hands. The gases nitrous-oxide and ethylene are not respiratory depressants except by anoxic action on the respiratory center. Agents given intraspinally affect respiration by direct action on the intercostal

nerves. Too high a spinal anesthesia may cause respiratory cessation by action on the medulla. The intravenous administration of the derivatives of barbituric acid may cause a marked depression of respiration. Avertin causes a decrease in respiratory rate and amplitude.

The relation of anesthetic agents to postoperative pulmonary complications is less clear than is the relationship between the preoperative physical state of the patient, the operative procedure and postoperative respiratory complications.

Kidneys

The kidneys, as other structures of the body, may suffer definite damage by anesthesia. Anoxia, here too, may cause damage to this structure. The gases, cyclopropane, nitrous-oxide and ethylene, cause no kidney damage. Ether, however, is a definite kidney irritant. It is felt by many that ether narcosis leads regularly to reduction in kidney secretion and even to anuria. This susceptibility of the kidneys to ether anesthesia is more marked in the elderly patient. This reduction in kidney function is associated with an increase in nitrogenous products in the blood. It was felt at one time that agents given intraspinally caused an increase in kidney function. Some recent work in this regard prevents one from making a definite statement in this regard at this time. Certain it is, however, that the administration of spinal anesthesia causes very little if any increase in the nitrogenous bodies in the blood stream, and no damage to kidney structure.

Avertin, though broken down by the liver, is excreted through the kidneys and may further injure an already damaged kidney.

Circulation

Here too, any anesthetic agent or method that interferes with adequate oxygenation of tissues interferes with normal circulation. Thus anoxic anoxia is to be avoided. Nitrous-oxide and ethylene, particularly if associated with anoxia, cause a rise in blood pressure. The induction phase of ether is associated with an increase in blood pressure.

All anesthetic agents may cause cardiac arrhythmia. The greatest offender is probably cyclopropane. The exact harmfulness, if any, of this arrhythmia has not been determined. In spite of its tendency to produce arrhythmia, particularly in overdoses, its use in the presence of cardiac damage is felt by many not to be contraindicated. The benefit

to heart muscle to be derived by the hyperoxygenation associated with the administration of cyclopropane-oxygen, it is felt, more than outweighs any interference this agent may have with the conduction mechanism of the heart. Important it is, however, that in the presence of a poorly functioning heart, overdosage must be prevented. Overdosage with cyclopropane causes bradycardia. Bradycardia may follow the intraspinal injection of local anesthetic agents. The bradycardia is probably due to direct action upon the cardiac sympathetics. Prophylactic use of agents, as ephedrine, to a great degree prevents this bradycardia.

Barbiturates given intravenously cause a fall in blood pressure which, though not usually great, is apt on occasion to be quite marked. The intraspinal anesthetics by their action on vasoconstrictors also cause a fall in blood pressure. This fall is sometimes marked but can usually be prevented by the prophylactic use of ephedrine.

Central Nervous System

Nerve cells are the most highly developed cells in the body and the most susceptible to oxygen want. Permanent cellular damage may be caused by even short periods of asphyxia and certainly by long periods of suboxygenation as with nitrous-oxide and ethylene anesthesia.

The gases nitrous-oxide, ethylene and cyclopropane, in that order, are very rapidly given up by nerve tissue. Ether is given up much more slowly. The order of profoundness of action of inhalation agents on nerve tissue is ether, cyclopropane, ethylene and nitrous-oxide. The extent of relaxation of skeletal muscles is thus in the same order. The highest degree of relaxation of skeletal musculature follows the subarachnoid admission of procaine or its derivatives.

Spinal anesthesia causes the greatest increase in intestinal peristalsis while deep ether anesthesia invariably causes intestinal atony.

Chloroform and ether inhibit uterine contractions. The gases nitrous-oxide and ethylene, avertin and spinal anesthesia seem to have very little effect on uterine musculature. Cyclopropane seems to have a slight stimulating effect on the tonus of uterine muscle.

The relative toxic effects of agents used in regional anesthesia should be mentioned. Weight for weight, procaine is the least toxic with pontocaine the next and nupercaine the most toxic. It is felt that procaine is the best of the agents for regional

anesthesia. Since the dosages vary so greatly with the agents and since so little of the drug is used in spinal anesthesia the systemic toxic effects of these agents are probably not of great importance in this latter type of anesthesia.

Though not considered among the pharmacologic actions of anesthetic drugs I feel it important to mention another possible characteristic action of certain anesthetic agents. This characteristic may on occasion do more damage to the patient than some of the pharmacologic effects. This characteristic is the explosiveness of anesthetic agents. The only true anesthetic agents commonly used which have not killed by explosion are nitrous-oxide and the local anesthetics. Ether, a combination of nitrous-oxide oxygen and ether, ethylene

and cyclopropane are all explosive. The range of explosibility of ether-oxygen is greater and the ignition temperature is lower than with cyclopropane-oxygen.

Employing similar anesthetic methods, ether is no less an explosion hazard than are other explosive agents. Given by open drop the inflammable ether vapor is along the floor and may be anywhere in the room. Employing closed methods of anesthesia the explosive atmosphere is limited to within a few inches of the face mask. Statistically, explosions are the least hazardous of anesthetic complications. The dangers from asphyxia, acute or carried along in a subacute form throughout an anesthesia, are infinitely more important.

III. METHODS OF ADMINISTRATION

For the proper administration of the anesthetic agents a thorough knowledge of the various signs of anesthesia is of the utmost importance, because it is by these signs that the anesthetist is able to guard the safety of the patient and to regulate the depth of anesthesia necessary for the surgical procedure to take place. The clearest and most concise description we have of the signs and stages of anesthesia is given in a small hand-book entitled "Inhalation Anesthesia—A Fundamental Guide" by Dr. Arthur M. Guedel.

Reviews of recent textbooks on Anesthesia remark upon the emphasis put by their authors on the necessity of acquiring a good technique of administering ether. A thorough knowledge of ether anesthesia is the basis of the technique of the administration of any other anesthetic.

The inhalation anesthetics may be divided into two groups—the volatile agents and the gaseous agents. The volatile agents are administered by three methods: (1) the open method, (2) the semi-open, or the semi-closed method, and (3) the closed method. The open method consists of dropping ether or other volatile agent on a gauze mask. Guedel states that this method is still used more than any other. I doubt if this is true of this section of the country.

The only advantage of this method is that it may be less disagreeable for the patient, provided that the ether is not dropped on too rapidly, because he gets an abundance of fresh air. The disadvantages are that the ether vapour is cold and therefore more

irritating to the mucous membranes, that the exhaled carbon dioxide cannot be controlled or made use of, there is great loss of heat and moisture and a large amount of ether is wasted by being blown away from the mask by the patient's exhalations.

If a towel or gauze is wrapped around the mask, this is no longer an open method, but a semi-open method. For the semi-open method the cone devised by Dr. Miller is the most efficient of the various cones that have been made for the administration of ether. There are many reasons for this. The cone consists of folded newspaper covered with a towel forming an open tunnel. Eight layers of No. 3-A gauze are placed over one end of the tunnel and pushed down by means of an expansible ring of sheet brass about two inches wide. The ring is then expanded to make a tight fit. The tunnel is thus divided into two chambers, one about four or five inches deep, and the other equal to the depth of the brass ring. The open end of the large chamber is placed over the patient's face. There is thus provided a fairly large semi-closed breathing space between the patient's face and the gauze partition.

To specify eight layers of gauze may sound rather arbitrary, but it is important. Experience has proved it most satisfactory. If there are only two layers of gauze for this partition, the ether, when dropped on, will spatter through and may drop on the patient's face; moreover, it does not vaporize readily. The inhalations and exhalations of the patient pass through the gauze too freely.

If there are a dozen or more layers the gauze may soon become soaked with the condensed moisture from the patient's exhalations, thus interfering with the vaporization of the ether, and also prevent sufficiently free inhalation and exhalation through the gauze partition. This may result in too much carbon dioxide being built up and an insufficient amount of fresh air being inspired for adequate oxygenation, with over-stimulated breathing, or cyanosis and a poorly anesthetized patient.

Whether it will be advantageous to add loose gauze in the upper chamber will depend upon the reaction of the patient, but in any case it is important to see that the gauze does not become water-logged and prevent free vaporization of the ether and a free ingress and egress of air.

The great advantage of this large chamber is that it serves as a mixing chamber. Ether should be dropped on the gauze partition or added in small amounts at intervals frequent enough to maintain smooth anesthesia, not poured on in quantity at irregular intervals. The warm air exhaled by the patient helps to vaporize the ether and also warms it to quite a considerable degree; the inspired mixture is moist, since only a part of the exhaled moisture is lost. A small amount of carbon dioxide is rebreathed, which may be helpful since under ether anesthesia more than a normal amount of carbon dioxide may be given off.

Less heat and moisture are lost from the patient with the semi-open method than with the open method. The semi-open method is also more economical.

We ordinarily think of the semi-closed method as associated with the gas machine rather than with the cone. With the gas machines, except in the carbon dioxide absorption technique, a certain amount of the expired air and anesthetic agents are allowed to escape through an escape valve, otherwise an excess of carbon dioxide would accumulate, resulting in over stimulation of the respiratory center.

In the closed method of administering the inhalation anesthetics no provision is made for the escape of exhaled gases, except a safety valve in case too much pressure is built up within the apparatus, the exhaled carbon dioxide being absorbed by soda-lime and oxygen being added at a constant flow to meet metabolic needs varying from 200 to 500 cc per minute. This is called the Carbon Dioxide Absorption Technique. It was first used in the

anesthesia of human beings by Dr. Ralph Waters. Two methods of using this technique are widely used. The first as devised by Dr. Waters is called the To-and-Fro Method. The canister of soda lime is placed between the face mask and the breathing bag, the patient breathing to and fro through the soda lime which absorbs the exhaled carbon dioxide. The anesthetic agents are supplied from the gas machine either to the distal end of the bag or directly to the mask.

The second method is called the Closed Circle Filter Method. Two large breathing tubes lead from the mask to the gas machine. The canister of soda lime and inhaling and exhaling valves are built into the machine in such a way that the expired gasses pass through one tube to the machine, through the soda lime, and on inspiration back through the other tube to the patient. Accurate measurement of the flow of oxygen for proper oxygenation is necessary in either method.

Practically all gas machines made today for general anesthesia have the filters and valves built into them, but all are adaptable to the to-and-fro method. Each method has its slight advantages and disadvantages. The to-and-fro method is to many anesthetists the more clumsy since the canister of soda lime next to the mask has to be supported by a pillow or other device.

Among the advantages of the carbon dioxide absorption technique are:—the patient breathes a warm atmosphere; the respired gasses are always moist because of the patient's exhaled moisture, any excess of which will be condensed in the apparatus; sweating is rather infrequent, hence there is less dehydration and less loss of body heat. There is less post-operative vomiting. Since the expired anesthetic agents are breathed over and over, only small amounts are needed to make up for some inevitable losses after the maintenance level is reached, hence there is great economy in gasses and whatever volatile agents are used.

The Carbon Dioxide Absorption Technique is the only feasible one to use with cyclopropane on account of the high cost of cyclopropane, and also it is desirable to keep cyclopropane confined within the respiratory circuit. Occasionally, for some cause not easily explained, we have a patient who does not do well with this method. Usually the patient has reached the unconscious stage before any difficulty manifests itself. In such cases it is best to cut out the filter and use the semi-closed

method or use the semi-open cone. The method is adaptable for any operation except operations on the nose and mouth, and even in these operations it may be used successfully if an endotracheal catheter with the Waters inflatable cuff is used.

The endotracheal method of administering inhalation anesthetics has definite advantages in selected cases. A large bore catheter is inserted into the trachea through the mouth, or a Magill tube through the nose. Considerable experience and dexterity are necessary to intubate a patient easily and quickly. Several types of catheters have been developed for this method, the choice depending upon what one wishes to accomplish. The catheter with an inflatable cuff, devised by Dr. Waters, is the most efficient. After the catheter is inserted the cuff is inflated with from three to five cc of air, making a snug fit in the trachea. Any of the inhalation anesthetics can be used. The method is particularly valuable when it is desirable to do away with the face mask because the catheter can be connected with the gas machine by means of adapters and either the semi-closed or absorption technique may be used. The inflated cuff prevents loss of the anesthetic agent, and blood and mucus cannot get into the trachea. With a proper sized tube, a clear airway is assured and anesthesia is easily controlled. Under light anesthesia the patient cannot strain so much as when the glottis can be closed.

The endotracheal method is valuable in chest surgery, especially when it is desirable to aspirate bronchial secretions by means of a small catheter inserted within the endotracheal tube. In cases of intestinal obstruction in which the patient is liable to vomit a large amount of fluid, an endotracheal tube with the inflatable cuff may save the patient's life by preventing aspiration of fluid. The method is very useful in certain cases of thyroidectomy, nasal, dental, and other operations about the head. Some anesthetists use the endotracheal method almost to the exclusion of other methods, but unless there are definite indications for using it I fail to see any reason for doing so. It is well to remember that nature has provided a pretty good breathing apparatus.

Avertin

At present avertin is used mostly as a basal anesthetic, no attempt being made to obtain complete anesthesia with this agent. I believe that the most practicable dosage scale is the one worked

out from a very large experience by Dr. Paul M. Wood. Patients weighing from 45 lbs. to 110 lbs. are given an 80 m.g. dose; patients weighing 130 to 145 lbs. are given approximately a 75 m.g. dose; patients weighing 170 lbs. are given a 70 m.g. dose; and patients weighing 200 to 220 a 60 m.g. dose; patients weighing 250, even up to 450, are never given more than 6.5 c.c. of avertin in amylene hydrate which for a 250 lb. patient would be considerably less than a 60 m.g. dose. With children a slightly higher dosage may sometimes be advisable.

The patient is usually asleep within six or seven minutes after administration. Occasionally a patient may talk quite rationally before the administration of the supplementary anesthetic but usually these patients have no recollection of it after the operation. Many patients have a dread of going to the operating room and dread taking an inhalation anesthetic. It is a great relief to such patients to be assured that they will be asleep before they leave their room.

Avertin is particularly useful for the hospitalized dental patient in the removal of impacted, unerupted teeth, dental cysts and extensive extractions. Most cases can easily be carried through with nitrous oxide, but the addition of a small amount of ether may be necessary in a few cases. The patient sleeps from one to three hours after the operation, is drowsy for several hours, and is relieved of a great deal of post-operative pain. The use of avertin in this type of work in the alcoholic patient often averts a battle. An airway should always be left in the patient's mouth till rejected or until the tongue reflex has returned, in order to prevent respiratory obstruction.

Several years ago, in a routine tonsil clinic in which six children were given nitrous-oxide-oxygen induction followed with ether, with the cone, I used twenty-two gallons of nitrous oxide, which, had it been taken from a 3200 gallon tank at today's prices would have cost nineteen cents. Twenty-two gallons of nitrous oxide in C cylinders cost thirty-three cents at present prices. Six children could not have a straight ether induction with nineteen or thirty-three cents worth of ether. I believe that children should not be subjected to the discomfort of straight ether induction. With the gas, the child may cry and be somewhat frightened, but you know that he is not undergoing the terrifying suffocation of breathing what is altogether too often a crowded ether induction.

THE RHODE ISLAND MEDICAL JOURNAL

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history will frequently point a directing finger. Certain laboratory or X-ray work may be the solution of the problem, or perhaps some special examinations. There are so many of these that it is only by vigilant coordination of the facts found by the eyes, ears and fingers that the proper selection of procedure can be made. In this way patients can be saved from the dangers of neglect or the burden of excessive laboratory studies. We should always bear in mind that it is the things we don't think of rather than the things we don't know that cause the greatest woes in medicine.

PERIODIC HEALTH EXAMINATIONS

The medical profession has for some time encouraged people to have periodic health examinations, especially those who are of middle age or over. There is much that can be gained by such examinations if properly done, but all too often these are cursory examinations that would miss a great many of the conditions that might be found by a more careful examination. On the other hand, the examinations can well be so extensively carried out that it becomes such a serious burden on the patient's finances and time that it is many years before he returns for another. Either extreme is detrimental to the continued practice of periodic examinations.

The practice of such examinations is sufficiently valuable to make it worthwhile to stop and think on occasion just what should be done and what should not be done.

While it is frequently called a physical examination, the physical examination is the least fruitful though an especially necessary part of it. There are relatively few significant conditions that can be found on physical examination without having caused some indications that would be listed in a careful history. The history, so often neglected, should be the foundation stone on which the remainder of the examination is built. From this we can determine what further examination should be done to confirm or negate our primary suspicions. Without an adequate history, which needs to contain a complete history of the systems, the remainder of the study becomes a rather aimless groping in the dark and the findings cannot be properly evaluated.

It is common knowledge that really quite obvious findings will be missed unless something directs us to look quite specifically for them. An adequate

TEST BY NUMBER

So far as medicine has risen from superstition to science, progress has been made over a way mapped by hard-gained experience, but the shortest road has always been found as a result of statistical examination of the phenomena which have been encountered along the way. Scientific medicine had its beginning with the statistical study of disease and its treatment, as introduced by Louis of Paris. He proved mathematically that venesection, the routine treatment of the time for pneumonia, not only was of no benefit but was distinctly injurious and responsible for many deaths. Holmes followed with his statistical study of puerperal fever, which shortly banished this curse from lying-in hospitals. Test by numbers is responsible for the use of the ligature rather than the cautery to staunch hemorrhage, for the prevention of small pox by vaccination, for the control of diphtheria by toxin-antitoxin. The list can be extended without end.

The Trustees of the Fiske Fund propose as a topic for the 1940 Prize Essay, the subject: "Fractures of the Femur—Results of Treatment Compiled from Experience or Hospital Records," and offer a premium of two hundred and fifty dollars for the best essay on this subject. For several years past, treatment of fracture of the femur has been in a state of transition. New methods have been introduced, some of them spectacular, all tending toward restoration of perfect function in the fractured limb. The period of confinement has been shortened and the mortality rate from this serious condition seems also to have been greatly reduced. The Fiske Fund now offers to the winner of the prize an opportunity not only to gain two hundred and fifty dollars but also to confer a distinct benefit

on the profession and on many patients who suffer from a painful, confining, crippling, and often fatal condition. To what extent are the more recent methods of treatment of fracture of the femur superior to those so long in vogue? Which of the recent methods of treatment is superior to the others in comfort to the patient, in restoration of function, in preservation of life? These are some of the questions which may be answered by the 1940 Fiske Fund Prize Essay.

PROVIDENCE MEDICAL ASSOCIATION

November Meeting

A regular meeting of the Providence Medical Association was held at the Medical Library on Monday, November 6, 1939. The meeting was called to order by President H. C. Messinger at 8:30 P. M. The minutes of the preceding meeting were read by the Secretary and were approved as read.

The Secretary reported for the Executive Committee as follows: That the Committee had authorized the Chairman of the Publicity Committee to act for that Committee in all matters of press publicity. That it had approved the plan of the Publicity Committee to establish a Speaker's Bureau of Association members. That it had approved a plan to investigate the possibility of forming a Hobby Club of the Association members. That it had approved the plan of the President that a copy of all papers read before medical groups and a copy of all papers written for medical publications outside this State, be filed permanently at the Medical Library. That it had approved for presentation to the Association the report of the Committee on Tuberculosis, which reads as follows: "The Committee on Tuberculosis has considered the letter of Doctor Francis V. Corrigan, regarding reports of tuberculin testing and chest X-ray examinations, and recommends that the Association approve the suggestions contained in his letter as read before the Association on October 2, 1939."

On the motion of Dr. John C. Ham the report of the Executive Committee, including the recommendation of the Committee on Tuberculosis, was accepted.

Dr. R. S. Bray reported briefly for the Publicity Committee, and also urged members interested in

joining the Hobby Club to send in notice of their intention to the Executive Office. Dr. Amy Russell, delegate of the Association to the Rhode Island Nutrition Association meeting, reported briefly of the work of that group in this State.

The President, reporting in the absence of Dr. A. M. Burgess, Chairman of the Committee for the Community Fund Campaign, stated that the quota of the doctors and dentists had been exceeded, and a 109% total had been achieved, for which much thanks was due to all members, and particularly to the Association Committee which gave so liberally of its time in canvassing the members for the Fund.

The Secretary reported that the Executive Committee recommended for election to active membership the following:

Louis Goodman, M.D.
Charles Potter, M.D.
David Litchman, M.D.
Ciro O. Scotti, M.D.

On the motion of Dr. Jesse Mowry these applicants were unanimously elected to active membership.

The President announced the appointment of the following committees: To prepare the obituary of Dr. Walter L. Munro, Dr. John M. Peters and Dr. Halsey DeWolf; to prepare the obituary of Dr. Albert B. Hayes, Dr. George VanBenschoten and Dr. Paul C. Cook.

The President announced that the obituaries of both Dr. Munro and Dr. Hayes would be read at a future meeting of the Association.

The President introduced as the final speaker of the evening Dr. Samuel Morein, who spoke on "Newer Aspects of the Medical Treatment of Gastric and Duodenal Ulcers." The paper was discussed by Dr. R. S. Bray.

The second speaker of the evening was Dr. Champ Lyons, Resident Surgeon at the Massachusetts General Hospital, who presented a very interesting and practical paper on "Chemotherapy and Immunology of Pyogenic Infections." Following his presentation Dr. Lyons devoted considerable time to answering questions proposed by Drs. Jesse Eddy, 3rd, John C. Ham, Francis Chafee, S. G. Blount, Morgan Cutts, Emanuel Benjamin, Frank Cutts, and several others.

The meeting was adjourned at 11:45 P. M.
Attendance 120. Collation was served.

Respectfully submitted,

HERMAN A. LAWSON, M.D., *Secretary*

THE MEMORIAL HOSPITAL

Clinical Pathological Conference, May 10, 1939

CASE PRESENTED BY DR. K. C. VON POHLE

No. 28970—Male—(E.W.) Age: 76. American.

Patient was first admitted to the Memorial Hospital on 12/23/32, complaining of urinary retention and pain in the lower abdomen radiating along the course of the urethra and down the thigh. He had enjoyed a fair degree of health up until about three years ago at which time he began to have difficulty with urination. First he had frequency but on attempting to empty the bladder, he was forced to strain and had a definite slowing of the stream, dysuria, rectal as well as vesicle tenesmus. This condition grew progressively worse until Thanksgiving, 1932, when the pain in the back and suprapubic region became so agonizing that the patient had to be carried home, whereupon his family doctor catheterized him. Since the onset of symptoms and up to Thanksgiving, the patient continued to work but for the past week has been unable to void normally and has catheterized himself three to four times daily.

Family history: No familial diseases. Father lived to over one hundred years old.

Past history: No childhood diseases. No history of other infectious diseases except malarial fever. No history of injuries, operations or previous hospital entries. Has had a left inguinal hernia twenty years and for the past three or four years has had dyspnea on exertion, palpitation, and a pounding sensation in his ears.

Physical examination: A poorly nourished old man, mentally alert and cooperative, complaining of burning in penis. Examination revealed normal nose and throat condition. There was a soft blowing systolic murmur audible at the mitral area and not transmitted. The lungs were negative except for a few emphysematous rales at the bases. The abdomen was thin and scaphoid and otherwise negative except for a symmetrical suprapubic tumor or mass over the bladder area, due to retention of urine. The left inguinal hernia was present. The tumor mass was very tender to palpation. The genitals were negative. Rectal examination revealed a moderate sized prostate, soft to palpation except for a small hard area about four millimeters in diameter over the lower right capsule. The extremities showed a marked wasting and weakness and coarse tremor of the legs. The reflexes were hyperactive.

Laboratory Findings: On the first admission, urinalysis revealed a large trace of albumin but no sugar. Sediment contained a large number of leukocytes and red blood cells. The blood chem-

istry was normal. Renal function appearance time was fifteen minutes. Total of 25% excretion in two hours. Wassermann and Hinton negative.

Cystoscopy: Cystoscope met with considerable resistance in the prostatic urethra. The bladder revealed a chronic cystitis with many cellules and three small diverticulae. The prostate was generally enlarged and projecting into the vesicle outlet as a corrugated enlarged collar with definite lobulated projections hanging down from the anterior commissure which might readily act as a ball-valve obstruction. No stones nor foreign bodies seen. Conclusion: Adenomatous hypertrophy of the prostate gland with beginning carcinoma of the right side of the capsule and a questionable malignant ball-valve growth at the vesical orifice.

Operation: Suprapubic cystostomy. Upon visualizing the bladder a yellowish soft fibro-fatty sessile body growth $2\frac{1}{2}$ inches in diameter and pedunculated was observed. It was of an unusual type. The prostate itself was moderately enlarged intravesically and appeared to be malignant. The whole prostate including the pedunculated mass was enucleated. Wound was closed in usual manner with suprapubic open-end Pezzer drain. Grossly, the diagnosis of carcinoma of the prostate was confirmed.

X-Ray of the chest and long bones revealed no metastatic outgrowths.

Pathological Report: Carcinoma of the Prostate Gland.

As the patient was a ward patient no radium nor radon seeds were available.

Patient was discharged on January 23, 1933, symptom free.

RE-ADMISSION

Patient re-admitted January 27, 1939, six years and thirty-five days after previous admission, complaining of urinary retention, pain in the lower abdomen radiating along the urethra and down the thighs. He states that during all this time he was in good health and had no urinary trouble until about five weeks previous to this last admission when he began to have marked hematuria. Patient's physician was unable to catheterize him and sent him to the hospital. He was thin, emaciated and in acute distress. He was unable to urinate and a sensitive mass was again found over the suprapubic region. Rectal examination revealed a soft mass over the remaining prostatic capsule and a small irregular hardness on the right.

X-Ray examination of the chest and long bones revealed no definite abnormality of the lungs. In particular, there was no evidence of primary

or metastatic neoplasm. Examination of the long bones of both legs and forearms including the wrist joints were negative for primary or metastatic neoplasm.

Cystoscopy: Cystoscope passed with some difficulty and blood stained turbid urine was obtained. The bladder capacity was only 125 cc. There could be seen a recurrent lobulated intravesical nodular growth extending back over the trigone and surrounding the outlet.

Laboratory Findings: Blood chemistry check-up: Urea Nitrogen 26.62, Creatinine 1.4, Sugar 154. Blood count. Hgb. 62%, R. B. C. 2,900,000, W. B. C. 8,000, Neutro. 72%, Lymph. 28%. The Wassermann-Hinton tests were negative.

Operation: Suprapubic cystostomy. Inspection of the bladder revealed a recurrent nodular carcinomatous growth around the vesical orifice. Electric excision was resorted to removing about ten good sized pieces of the recurrent growth with a half inch wire loop, removing all obstruction to the organ.

Pathological Report: Carcinoma of the Bladder, Polypoid Type. The patient was discharged improved on February 21, 1939 to be followed by O. M. D.

DR. KERNEY: You already know the diagnosis clinically and pathologically, but the reason for the presentation of this case is to stress the long period of time that this patient was absolutely free from metastases without the use of radium and also to bring out the proper operative disposition of the conditions with its complications. Here was a condition of combined adenomatous hypertrophy with a beginning malignancy of the right side of the capsule, a lobulated pedunculated growth acting as a ball-valve obstruction complicated by a hard firm tightly strictured posterior urethra from the carcinomatous growth through which no operative resectoscope could be passed. Therefore, it was a question of whether to do a perineal prostatectomy or radical removal of the prostate through the perineum or to do a suprapubic, but on account of the lobulated mass within the bladder and the fact that a recurrence would probably occur, it was deemed advisable to do a thorough enucleation suprapubically. Had the patient been able to afford radium, we would, of course, have used the same to the best advantage. However, this patient without radium has outlived the average time following malignant prostatectomy in which radium has been used. Up to this date, May 10, 1932, the patient is still comfortable at the age of 82 years with the bladder closed and voiding normally. Should he have further recurrence, another suprapubic can be done if necessary and the patient can be allowed another extension of comfort.

DR. KENNEY: I remember a case we had here which had metastasis within a year's time. The man was re-admitted on the medical service. When we looked up the report on the previous history, we found that there was only a small piece reported that looked like a malignant area and all the other sections did not show it. Inside of a year's time, it had metastasized to lungs, long bones; practically a generalized carcinomatosis. It is very unusual to have a case of this type going that length of time.

OBSTETRICAL CONFERENCES

The following program of Obstetrical Conferences will be offered to all physicians by the Rhode Island Medical Society and the Division of Maternal and Child Health of the State Department of Public Health.

Place: Providence Lying-In Hospital Auditorium.

Time: 11 A. M. Each speaker will be allotted 20 minutes, and there will be one-half hour for round table discussion.

Wednesday, February 7

Dr. Alfred L. Potter: "Nutritional Factors in Pregnancy"

Dr. Goldberger: "Demonstration A-Z Test"

Wednesday, February 14

Dr. R. R. Hunt: "X-ray Pelvimetry" demonstration of new method

Dr. George W. Waterman: "Obstructed Labor" Manikin demonstration

Wednesday, February 21

Dr. I. H. Noyes: "Prolonged Labor"
Motion picture film to follow

Wednesday, February 28

Dr. Paul Appleton: "Toxemias of Pregnancy"

Wednesday, March 6

Dr. B. H. Buxton: "Hemorrhages of Pregnancy"

Motion picture film: "Treatment of Hemorrhage"

JOHN G. WALSH, M.D., *Chairman*
Maternal Mortality Committee
Rhode Island Medical Society

CHARLES V. CHAPIN HOSPITAL

Dr. Michael DiMaio finished his internship on December 15, leaving to start a service at the Rhode Island Hospital. On December 31, Drs. Walter E. Batchelder and Isadore Gershman each completed an internship of six months.

Two interns starting a six month service are Dr. Corinne S. Eddy and Dr. I. Harry Magnet. Dr. Eddy is a graduate of the University of Chicago and the University of Illinois College of Medicine. She served a general rotating internship at the Lutheran Memorial Hospital in Chicago and was at the Massachusetts Memorial Hospital for eight months. She recently took graduate work in public health at the College of Physicians and Surgeons, Columbia University. Dr. Magnet attended Harvard University and completed his course at Tufts College Medical School in 1937. He has had an internship at the Union Hospital in Fall River and also an assistant residency in pediatrics at the Boston Floating Hospital.

On December 14, 1939, a testimonial dinner was given in honor of Dr. and Mrs. Richardson by the resident staff and employees of the Charles V. Chapin Hospital. Practically the entire staff gathered to bid farewell to Dr. Richardson and greet the new superintendent, Dr. William Hindle. Dr. and Mrs. Richardson were presented with a grandfather's clock and the hope suggested that they remember their friends at the Chapin Hospital each time the clock strikes. Dr. Richardson was also presented with a scroll signed by the 230 employees of the hospital. The scroll was inscribed:

"We, the undersigned resident staff and employees of the Charles V. Chapin Hospital, wish to take this means of expressing our appreciation to Dr. Dennett L. Richardson.

"Realizing that his thirty years of untiring effort and unselfish loyalty to this institution since its foundation in 1910 have lifted it to a prominent place in the civilized world, we regret the loss to the hospital and wish him every success in his new undertaking."

Mrs. Richardson was presented with a bouquet of roses. Dr. Richardson expressed his sincere gratitude and Dr. Hindle in a short speech greeted his "new family" and expressed hope for the same cooperation that had been given Dr. Richardson.

Drs. W. B. Cohen, F. Ronchese, V. J. Ryan and C. D. Sawyer attended the second annual meeting of the American Academy of Dermatology and Syphilology in Philadelphia, November 6, 7, and 8, 1939.

OBITUARY

WALTER LEE MUNRO, M.D.

We think of Walter Lee Munro, not only as a great doctor, but as a great man; a dynamic and truly unique personality. The outline of his life's story belongs here; which, though it may tell what he *did*, gives but a slight picture of what he *was*.

Dr. Munro came of Old Pilgrim stock, of a family which six generations ago, in 1690, owned land at Mt. Hope and was accounted amongst the earliest settlers of Bristol, R. I. Born in Bristol in 1857, educated in the schools of that town and of Providence, he graduated at Brown University, A.B. 1879 and later in 1882 received the A.M. degree from the same college. His Harvard M.D. in 1885 was followed by Hospital services at the Boston City and Lying-In Hospital.

After a short period of practice in Meriden, Conn., where, as he himself said, he stayed "just long enough to make sure that the city would not please me as a permanent residence," he returned to Providence where the rest of his life, even to its last few days, was spent in Hospital work and active private practice. He served from 1886 as one of the surgeons at the Rhode Island Hospital in the early days of antiseptic and aseptic surgery, continuing on the active staff until 1914, when he resigned. His many stories of the early days of surgical struggle against infection were fascinating and absorbing, chiefly as he told them; as a raconteur he was unsurpassed, with a memory which recalled the minutest detail and the ability of painting vivid pictures, which the blind might see. An effort at repetition here would be sacrilege.

In his later years he was consulting surgeon to the various leading Rhode Island Hospitals, and thus gave his time and service, over a period of fifty years, to the betterment and advancement of these institutions.

It should be noted that, in addition to this broad field of hospital work, he was one of the most active in establishing the St. Vincent de Paul Infant Asylum and was its first Visiting Physician. To his hospital work Dr. Munro was always devoted; a thorough, dependable, successful surgeon, sparing neither himself nor others, ever seeking newer and better ways to accomplish the end, and best of all treating the patients truly as human beings.

In private practice the story was the same; never hours too long, nor distances too great (the earlier days were in truth "horse and buggy days")—never the situation too complex or the personalities too trying, for him to fail to solve the problem, in his big, wise, whole-hearted and generous way. There are many patients still left who remember this splendid attitude towards his profession, an attitude which we all may envy and which made him the "Ideal Doctor."

Throughout his long life of active hospital and private practice, Dr. Munro retained an intense interest in the scientific development of medicine, in his reading keeping always abreast of its most recent advance, visiting annually many of the important clinics, especially at Rochester and Johns Hopkins, and retaining personal contact and friendship with the great figures of American medical life. Truly, as has been said, if a man is known by the company he keeps, our doctor was of the best repute, for he counted amongst his personal friends Drs. W. W. Keen, Mumford, Halsted, Howard Kelly, Oliver Wendell Holmes, Delafield, Sir William Osler, the Mayos, and others, whose names mark the high spots of American Medicine. Not only did *he know them*, but please note—they knew *him*!

With this brief outline of Dr. Munro as a doctor, what further shall we say of him as a man? This ardent, enthusiastic, hard working, devoted physician was too:

A writer, keen, interesting and discriminating, especially in bringing to light those pictures of the past in which he himself may have taken part. In addition to travel and medical articles there were several outstanding works from his pen—"The Physician on the Witness Stand," "The Old Back Campus," "The History of Medicine in R. I.," "The Experimenters at Brown," this latter appearing in the past few months. This is a vivid account of the telephone receiver, developed by the Scientific Department at Brown University, in which development Dr. Munro took a part. It would seem that Dr. Bell not only accepted this, but rather appropriated it from the inventors, without giving them due credit. Dr. Munro's style in writing was clear, his facts always correct, and, as we may imagine, to the point.

A traveller—who never tired of wandering to the far places; his very anticipation of a trip was a joy to behold. It was typical of his love of travel,

determination, and healthy optimism that, in his eightieth year, he decided to go around the world, when he broke his arm shortly before sailing; his first act, after recovering from the anaesthesia was to transfer the S. S. passage to the following year, same month. Again, on asking an elderly comrade to go to India with him, the latter replied "I'm afraid I couldn't stand the heat," Dr. Munro commented, "You can die in India as easily as in Providence, can't you?"

An athlete in College, he followed the various sports with intense interest throughout his life. A hunter of big game; from 1907-1917 the biggest spread of antlers of the Canadian Woods was to his credit.

A bon-vivant; no one was more the life of the party, nor more enjoyed the good fellowship of his legion of friends, young, middle-aged, and old—no difference which to this spirit, alive, at once with unquenchable youth and the moderation of older years. His temperament was cheerful, equable, patient, slow to wrath, optimistic as regards his fellow man, as well as of the future—thinking no evil of others and "in whom there was no guile."

Beyond these good qualities of Dr. Munro, surpassing them all and sticking out all over him, was the sublime quality of friendliness—to all who deserved it and came in his path, and probably to many who did not. He just couldn't help being "friendly"; which quality led naturally to another delightful trait—hospitality, unstinted and expecting no return.

Many was the overworked and underfriended intern, who visited the Doctor at the Sakonnet house; many the young practitioner glad to get a respite from worry and waiting, who found refuge for a week end at the same hospitable home—Thanksgiving and Christmas brought friends, near friends, and often almost strangers to his board—truly was he a lover of his fellow men, who in turn, loved him, one and all.

His family life, an outsider touches upon but lightly; through kindly hints from his daughter, Dr. Rose C. Munro, let us glimpse at the happy picture. To quote her, in substance: "If the doctor had a few spare moments at home, he would turn to his beloved books (vastly varied in character). His hearty meal, at night, (hour vague and indefinite) was usually eaten with a cat on his lap, a kitten on his shoulder, and a dog at his feet, the canary singing overhead. (His love of animals and

birds was very great, as was his delight in flowers, woods, and indeed all nature.) He was never cross, impatient, or depressed, but always cheerful, buoyant, and full of humor. At Christmas, *he* it was who lit the candles on the tree and on the Fourth of July, *he* again set off the fireworks."

Devoted as he was to his family, these few intimate pictures shed further light on this charming personality. The brave and uncomplaining way in which he met the double burden of failing sight and hearing was most wonderful. He simply wouldn't let it "get him."

As he goes from our sight, Dr. Munro leaves with us a fine sense of generous manhood, which looked out, not in; we have known a *man*, healthy in body, mind, and spirit, whose passing, young at eighty-two, leaves the world better for his having lived.

RESOLVED:

The Society extends its sympathy to Dr. Munro's family, to whom it directs a copy of these minutes shall be sent, as well as that the same be spread upon its records.

JOHN M. PETERS, M.D.
HALSEY DEWOLF, M.D.

ALBERT EDWIN HAYES, M.D.

Albert Edwin Hayes was born on February 9th, 1866 in Birmingham, England, and died on October 26th, 1939. His death occurred suddenly three days after an automobile accident in which he received painful but not apparently serious injuries, and was attributed to embolism.

His early education was obtained in his native country. At the age of twenty-one he came to the United States, and soon afterward entered Harvard University. He later attended the Medical School there, graduating cum laude in 1898. He then held an internship in St. Luke's Hospital, Lowell, Massachusetts, after which he returned to London for a period of study in Guy's Hospital, and for special training in ophthalmology in Moorfield's Ophthalmic Hospital. On his return to America in 1899, he immediately began practice in Providence, engaging in general practice but also devoting much time to ophthalmology, in which he was especially interested, and to which he gave increasing attention. He was actively connected with the Ophthalmological Out Patient Department

of the Rhode Island Hospital for twenty years. He was a member of the Providence, the Rhode Island, and the Massachusetts Medical Societies, as well as of the American Medical Association.

In 1900 he married Miss Fannie A. Colwell, of Providence, who survives him. There are two children, Miss Elizabeth Hayes, and Albert E. Hayes, Jr.

Dr. Hayes was a member of the Washington Park Methodist Episcopal Church, and was greatly interested in its activities. He was a member of the British Empire Club, and was also a thirty-second degree Mason.

Quiet and unassuming, Dr. Hayes was nevertheless a man of good personality. He was fully able to form his own opinions and did not hesitate to act on them when the occasion warranted. He had an unusual gift of inspiring loyalty and trust in his patients who relied unhesitatingly, and with good reason, on his judgment and ability. His patients, as one of them expressed it, seemed to form a large fraternity, united by their liking for him. The deep sense of loss which his passing has caused to his friends, his associates, and his patients, attests to the usefulness and the worthiness of his life.

PAUL C. COOK, M.D.
GEORGE VANBENSCHOTEN, M.D.

RECENT BOOKS

TEXTBOOK OF NERVOUS DISEASES. By Robert Bing, Professor of Neurology, University of Basle, Switzerland, translated and enlarged by Webb Haymaker. From the Fifth German Edition. pp. 838, with 207 illustrations including 9 in color. Cloth, \$10.00. The C. V. Mosby Company, St. Louis, 1939.

This book is an English translation of the latest and fully revised edition of Bing's Textbook of Nervous Diseases. We have long had his Regional Diagnosis and his Lectures on Nervous Diseases. The present work is presented in conventional textbook form but does not lose the clarity and ease of style which we enjoyed in his Lectures. The book shows the result of the author's long and extensive clinical experience and is definitely clinical in its approach. It is interesting to recall that Bing is one of the few remaining men to have studied under the distinguished neurologists, Edinger, Oppenheim, and Degerine. At the same time he gives us a good presentation of recent advances in neurology, world-wide in scope. An example of this is his discussion of the use of Dilantin in the treatment of Epilepsy. A good list of references is given after each chapter. A very large proportion of these is to publications

in English, but German and French writings are also well represented. The translator, Webb Haymaker, has done a very good job and the book-makers are to be highly commended as well.

Needless to say, in a work like this, covering the whole field of neurology and yet kept within reasonable size, one can find some things to criticise. There are one hundred and twenty-eight pages devoted to Diseases of Peripheral Nerves and on the whole, the subject is well covered. The author emphasizes the value of large doses of sodium salicylate in the treatment of sciatica in its early acute stage, but does not mention that unpleasant gastric upset may be prevented in many cases and greater relief of pain obtained by giving this drug by rectum (90 or 100 grains). Under the treatment of the various neurological conditions caused by syphilis, the translator notes some important differences between the views of Bing on this subject and those of many of our American specialists and, besides summarizing the former, has added the latter. It seems that for one thing, the drug tryparsamide, which is used a great deal in this country, is used much less on the European continent.

The discussion of the etiology of disseminated sclerosis is pretty full, even though it does not touch on the possible relationship with epidemic encephalitis, and the conclusions drawn seem sound. The psychoneuroses are well handled for a book of this type and the fact that we would not all agree on his classification is of no great importance. As he mentions the various psychotherapeutic techniques, we are reminded of the saying that happy is the physician who has found and made his own some method of psychotherapy over which he can feel enthusiastic.

If a physician could have but one book on Nervous Diseases he would do well to choose this one.

HARVEY B. SANBORN, M.D.

DISEASES OF THE SKIN. By Richard L. Sutton, M.D., Sc.D., LL.D., F.R.S. (Edin.) and Richard L. Sutton, Jr., A.M., M.D., L.R.C.P. (Edin.) Tenth Edition, revised, enlarged and reset. pp. 1549 + XIV, with 1452 Text Illustrations and 21 Color Plates. Cloth, \$15.00. The C. V. Mosby Company, 3525 Pine Boulevard, St. Louis, 1939.

Ten editions in twenty-three years are eloquent proof of the value of this classic text book of dermatology.

One need not go far back for noticeable changes, comparison of the last edition of 1935 with the present one is sufficient.

There is a profusion of beautiful illustrations. Every subject is thoroughly discussed with comments based on the large personal experience of the authors.

To physiology, physiological chemistry and immunology are devoted twenty pages of up-to-date, comprehensive information and references. Twenty pages are devoted to allergy, fifty to therapy in general, while every form of therapy is discussed in detail after each disease.

The volume closes with fifty-three pages on diseases of the mucous membranes.

I believe it will be difficult to think of a new subject, a new name, a rare disease, a new symptom, a new clinical entity, a new experimental or therapeutic procedure and not find it discussed or mentioned. The volume can be called, without exaggeration, a dermatological encyclopedia.

Of particular interest are the many original contributions of the junior author, as for example, on Acne Vulgaris, discussed as a pustular lipoidosis, and on Senile Keratoses considered not as precancerous lesions, but actually cancerous, as intraepidermal carcinomas of particularly slow growth rate.

The discussion and illustration of every angle of practical dermatology and syphilology make the book extremely valuable to the general practitioner. The number and accuracy of up-to-date references of investigative work and the many good histological illustrations make it extremely valuable to the student of the specialty.

F. RONCHESI, M.D.

NEW AND NONOFFICIAL REMEDIES, 1939, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1939. Cloth. Price, postpaid, \$1.50. Pp. 617-LXVII. Chicago: American Medical Association, 1939.

Each year a revised list of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association as of January first is published in book form under the title of "New and Nonofficial Remedies." The book contains the descriptions of acceptable proprietary substances and their preparations, proprietary mixtures if they have originality or other important qualities, important nonproprietary nonofficial articles, simple pharmaceutical preparations, and other articles which require retention in the book.

A supplement to the annual volume of New and Nonofficial Remedies is published twice a year to bring up to date such current revisions and additions as have been necessary since its last publication. Every product included in the book is subject to the official rules of the Council. The comments to rules are changed occasionally by way of clarifying interpretation to insure fair consideration of all submitted preparations as new standards are recognized. Such constant and critical consideration of its contents provides the physician with a valuable reference list of acceptable new preparations on which to base his selection for use in treatment according to the established current practices of the profession.

New and Nonofficial Remedies for 1939 omits many articles which appeared in the publication for 1938. A few of these have been omitted by action of the Council because they conflict with the rules that govern the recognition of articles or because their distributors did not present convincing evidence to demonstrate their continued eligibility. Among these are: Biliposol, Serobacterins and Suppositories Salyrgan. A considerable number of others have been omitted as being off the market.